SURGICAL APHONIA IN DOGS BY EXCISION OF VOCAL CORDS (CHORDECTOMY)

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Dogs play an outstanding role for experimentation in animals in medicine. Their bark, anyway, appears to be a serious shortcoming for it disturbs the working process, irritates the rest of the animals in the vivaria and upsets the tranquility of persons in nearby houses or hospital premises.

The authors undertook the task to utilize one of the many known methods for operation on the larynx bearing in mind that it had to be easily accessible, safe and suitable for aphonia in dogs (1, 2, 4, 5, 6, 7 and 8).

The endolaryngeal procedures through bronchoscope after Brünings or Hasslinger and vagotomy as well were discarded as ineffective. The extralaryngeal method of Gluck and Soerensen (5, 6), accordingly modified and adapted for dogs, was adopted.

Technique

Prior to operation, the animal is left fasting for 12 hours. Morphine-ether narcosis is employed: half an hour prior to intervention pantopone or morphine is injected at a dose 0.005 mg/kg body weight of each, and accordingly, one half to one milligram atropine, depending on the age of the animal. The dog is fixed on a special mount or is kept firmly immobilized by two assistants, in supine position. The effect of the injection is awaited for until relaxation of the animal occurs, i. e. 15—20 min, and thereupon narcosis is applied with ether imbued gauze, placed in a box with an opening in the bottom. The assitant is responsible for monitoring the depth of anesthesia. The animals should cease to react to stimuli, the corneal reflex should disappear and regular breathing should be secured. Next the entire laryngeal area is sheared (trimmed), shaved and desinfected according to universally accepted, routine methods. In carrying out the incision, the operator is guided by the eminentia thyreoidea; the incision (with a scalpel) begins from a point 3—4 cm distant from incisura thyreoidea and runs along to the first tracheal ring. The soft tissues are bluntly divided by a separator, consecutively identifying and separating the subcutaneous connective tissue, cervical fascia and connective tissue band between the muscles sternohyoidei and omohyoidei. The blood vessels are meticulously ligated. Stripping of the thyroid cartilage plates is carried out with a separator and the cartilage is dissected longitudinally, taking great care to protect the laryngeal mucosa; the latter is bluntly separated with a separator and in this manner the true vocal cords are identified and detached. They are sectioned with small, curved scissors. Bleeding should be avoided since it could readily result in heavy postoperative complications. Hence, the

wound surface along the internal aspect of the larynx is iodine daubed, cauterized of touched with a ferrum sesquichloratum, thrombostop or other solution. Thereafter a cat gut suture in layers is applied. The wound is sprayed with antibiotics or sulphamide powder. The skin suture is made with cat gut or silk threads. Dressing — with gauze and bandage, fixed with mastizol. The dogs should by no means reach the operative wound with their limbs. To this end, the fore- and hind-limbs are bandaged two by two and are moreover tied to a short wire, isolated with plastics. The dogs operated upon should be kept separately (isolated) from the other animals since the healthy ones might easily lacerate the operative wound. Next antibiotics are applied in routine doses per kilogram body weight for several days. The animals are kept fasting for 24 hours whilst in the subsequent 5—6 day period they receive soft, semi-liquid food, until swallowing reflexes are regained. In the winter the animals are kept warm for avoiding development of complications.

Results

A series of 10 dogs was operated upon according to the technique described. Aphonia resulted in all of them. Hemorrhage during the operation was insignificant. Eight of the dogs had an uneventful postoperative period. The follow-up period ranged from several months to one year. The outcome was assumed as permanent. Visibly altered reactivity as compared to that prior to operation was not manifested by the animals subjected to surgery. Two dogs died — one did not tolerate 0.01 morphine per kilogram body weight, whereas the second developed sepsis and bronchopneumonia. The latter was caused by secondary laceration and infection of the operative wound, since at the beginning of the experiment isolation of the animals was not provided for. After taking the necessary measures, complications of the kind no more occurred.

Inference

After testing a number of methods, a suitable and rather readily accessible procedure was chosen for surgical aphonia in dogs. The advocated by some authors (3) open treatment of the operative wound is considered unreasonable, since favourable conditions for infection are created. The latter has an essential practical bearing on the final operative outcome (7). The safest doses of narcosis are discussed and the conditions as well under which the postoperative period might run the best course. The results obtained are estimated as good. The animals operated on did not exhibit visible changes in their behaviour after follow-up up to one year.

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ОПЕРАТИВНАЯ АФОНИЯ У СОБАК ПУТЕМ ХОРДЭКТОМИИ

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РЕЗЮМЕ

При проведении хронических экспериментов на собаках, часто лай их мешает, в виду чего приходится их обезголосить. Для этой цели существуют разные методики, причем вопрос считается неокончательно решенным.

Авторы применяют экстраларингеальный метод хордэктомии с хорошим эффектом. Он рекомендуется для вызыва оперативной афонии у собак.